## SEQUENCE PROTOCOL

| (1) GE1        | NERAL INFORMATION:   |          |
|----------------|--|----------|
| (i)            | APPLICANT:  (A) NAME: Boehringer Mannheim GmbH  (B) ROAD: Sandhofer Strasse 112-132  (C) CITY: Mannheim-Waldhof  (E) Country: DE  (F) ZIP CODE: 68305                                  |          |
| (ii)           | TITLE OF INVENTION: New primers and probes for the detection of HIV  | -        |
| (iii)          | NUMBER OF SEQUENCES: 25  |          |
| (iv)           | COMPUTER-READABLE FORM:  (A) DATA CARRIER: Floppy disk  (B) COMPUTER: IBM PC compatible  (C) OPERATING SYSTEM: PC-DOS/MS-DOS  (D) SOFTWARE: PatentIn Release #1.0, version #1.30 (EPO) |          |
| (2) INF        | ORMATION FOR SEQ ID NO: 1:   |          |
| (i)            | SEQUENCE CHARACTERISTICS:  (A) LENGTH: 62 base pairs  (B) TYPE: nucleotide  (C) STRANDEDNESS: both  (D) TOPOLOGY: linear   |          |
| (xi)           | SEQUENCE DESCRIPTION: SEQ ID NO: 1:  |          |
| AGGGAAC(<br>GC | CCA CTGCTTAAGC CTCAATAAAG CTTGCCTTGA GTGCTTCAAG TAGTGTGTGC   | 60<br>62 |
| (2) INFO       | DRMATION FOR SEQ ID NO: 2:   |          |
| (i)            | SEQUENCE CHARACTERISTICS:  (A) LENGTH: 62 base pairs  (B) TYPE: nucleotide  (C) STRANDEDNESS: both  (D) TOPOLOGY: linear   |          |
| (xi)           | SEQUENCE DESCRIPTION: SEQ ID NO: 2:  |          |
| TTGACTA<br>SA  | GC GGAGGCTAGA AGGAGAGAGA TGGGTGCGAG AGCGTCAGTA TTAAGCGGGG  | 60       |

| (2) INFORMATION FOR SEQ ID NO: 3:                                 |            |
|---|------------|
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH: 62 base pairs   |            |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: both  |            |
| (D) TOPOLOGY: linear  |            |
| (b) Tolobodi. Tilleat   | •          |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:                          |            |
| ATTTTAAAAG CATTGGGACC AGCGGCTACA CTAGAAGAAA TGATGACAGC ATGTCAGGGA | 60         |
| GT  | 6:         |
| (2) INFORMATON DOD TO THE   |            |
| (2) INFORMATION FOR SEQ ID NO: 4:                                 |            |
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH: 54 base pairs   |            |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: both  |            |
| (D) TOPOLOGY: linear  |            |
|   |            |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:                          |            |
| CTAAAGGAAG CTCTATTAGA TACAGGAGCA GATGATACAG TATTAGAAGA AATG       | <b>-</b> 4 |
|   | 54         |
| (2) INFORMATION FOR SEQ ID NO: 5:                                 |            |
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH: 59 base pairs   |            |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: both  |            |
| (D) TOPOLOGY: linear  |            |
|   |            |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:                          |            |
| TGGAAACCAA AAATCATACC CCCAATTTCCA CCCCAATTTCCA                    |            |
| TGGAAACCAA AAATGATAGG GGGAATTGGA GGTTTTATCA AAGTAAGACA GTATGATCA  | 59         |
| (2) INFORMATION FOR SEQ ID NO: 6:                                 |            |
| • == ==================================                           |            |
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH: 65 base pairs   |            |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: both  |            |
| (D) TOPOLOGY: linear  |            |
| (vi) SPOUPNOR DESCRIPTION OF THE                                  |            |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:                          |            |
| ACTGTACCAG TAAAATTAAA GCCAGGAATG GATGGCCCAA AAGTTAAACA ATGGCCATTG |            |
| ACAGA   | 60         |

| (2) INFORMATION FOR SEQ ID NO: 7:                                 |          |
|---|----------|
| (i) SEQUENCE CHARACTERISTICS:                                     |          |
| (A) LENGTH: 53 base pairs   |          |
| (B) TYPE: nucleotide  |          |
| (C) STRANDEDNESS: both  |          |
| (D) TOPOLOGY: linear  |          |
| (b) Torobodi: Timear  |          |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:                          |          |
| CAATACATGG ATGATTTGTA TGTAGGATCT GACTTAGAAA TAGGGCAGCA TAG        | 53       |
| (2) INFORMATION FOR SEQ ID NO: 8:                                 |          |
| (i) SEQUENCE CHARACTERISTICS:                                     |          |
| (A) LENGTH: 77 base pairs   |          |
| (B) TYPE: nucleotide  |          |
| (C) STRANDEDNESS: both  |          |
| (D) TOPOLOGY: linear  |          |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:                          |          |
| AAGGAAAAGG TCTATCTGGC ATGGGTACCA GCACACAAG GAATTGGAGG AAATGAACAA  |          |
| GTAGATAAAT TAGTCAG  | 60       |
|   | .77      |
| (2) INFORMATION FOR SEQ ID NO: 9:                                 |          |
| (i) SEQUENCE CHARACTERISTICS:                                     |          |
| (A) LENGTH: 67 base pairs   |          |
| (B) TYPE: nucleotide  |          |
| (C) STRANDEDNESS: both  |          |
| (D) TOPOLOGY: linear  |          |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:                          | ٠        |
| AAATAGTAGC CAGCTGTGAT AAATGTCAGC TAAAAGGAGA AGCCATGCAT GGACAAGTAG |          |
| ACTGTAG   | 60<br>67 |
| (2) INFORMATION FOR SEQ ID NO: 10:                                |          |
| (i) SEQUENCE CHARACTERISTICS:                                     |          |
| (A) LENGTH: 59 base pairs   |          |
|   |          |
| (B) TYPE: nucleotide  |          |
| (C) STRANDEDNESS: both  |          |
| (D) TOPOLOGY: linear  |          |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:                         |          |
| CAGGAATTTG GAATTCCCTA CAATCCCCAA AGTCAAGGAG TAGTAGAATC TATGAATAA  | 59       |

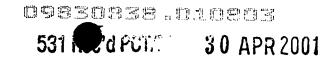
20 -

| (2) INFORMATION FOR SEQ ID NO: 11:                                |            |
|---|------------|
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH:101 base pairs   |            |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: both  |            |
| (D) TOPOLOGY: linear  |            |
| (2) Torohodi: Timear  |            |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:                         |            |
| AAAATTCAAA ATTTTCGGGT TTATTACAGG GACAGCAGAA ATCCACTTTG GAAAGGACCA |            |
| GCAAAGCTCC TCTGGAAAGG TGAAGGGCA GTAGTAATAC A                      | 60<br>101  |
| (2) INFORMATION FOR SEQ ID NO: 12:                                |            |
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH: 62 base pairs   |            |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: both  | . •        |
| (D) TOPOLOGY: linear  |            |
| · · · · ·   |            |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:                         |            |
| AGGGATTATG GAAAACAGAT GGCAGGTGAT GATTGTGTGG CAAGTAGACA GGATGAGGAT | <b>C</b> O |
| TA CONTORGAL  | 60<br>62   |
| (2) INTORVANTON DOD OF THE  |            |
| (2) INFORMATION FOR SEQ ID NO: 13:                                |            |
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH: 97 base pairs   |            |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: both  |            |
| (D) TOPOLOGY: linear  |            |
| (b) TOPOLOGI: Tinear  |            |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:                         |            |
| TGGCAACTAG ATTGTACACA TTTAGAAGGA AAAGTTATCC TGGTAGCAGT TCATGTAGCC |            |
| AGTGGATATA TAGAAGCAGA AGTTATTCCA GCAGAAA                          | . 60<br>97 |
| (2) INFORMATION FOR SEQ ID NO: 14:                                |            |
| (i) SEQUENCE CHARACTERISTICS:                                     |            |
| (A) LENGTH: 20 base pairs   | •          |
| (B) TYPE: nucleotide  |            |
| (C) STRANDEDNESS: single strand                                   |            |
| (D) TOPOLOGY: linear  |            |
| •                           |            |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:                         |            |
| TACCTGGCAT GGGTACCAGC   | 20         |

| (2) INFORMATION FOR SEQ ID NO: 15:        |      |
|---|------|
| (i) SEQUENCE CHARACTERISTICS:             | **   |
| (A) LENGTH: 26 base pairs                 |      |
| (B) TYPE: nucleotide                      |      |
| (C) STRANDEDNESS: single strand           |      |
| (D) TOPOLOGY: linear                      | •    |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15: |      |
| GACTAATTTA TCTACTTGTT CATTTC              | 2    |
| (2) INFORMATION FOR SEQ ID NO: 16:        |      |
| (i) SEQUENCE CHARACTERISTICS:             |      |
| (A) LENGTH: 18 base pairs                 |      |
| (B) TYPE: nucleotide                      |      |
| (C) STRANDEDNESS: single strand           |      |
| (D) TOPOLOGY: linear                      |      |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16: |      |
| CACACAAAGG AATTGGAG                       | 1    |
| (2) INFORMATION FOR SEQ ID NO: 17:        | •    |
| (i) SEQUENCE CHARACTERISTICS:             |      |
| (A) LENGTH: 20 base pairs                 |      |
| (B) TYPE: nucleotide                      |      |
| (C) STRANDEDNESS: single strand           |      |
| (D) TOPOLOGY: linear                      |      |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17: |      |
| TTTGGAATTC CCTACAATCC                     | 20   |
| (2) INFORMATION FOR SEQ ID NO: 18:        |      |
| (i) SEQUENCE CHARACTERISTICS:             |      |
| (A) LENGTH: 26 base pairs                 |      |
| (B) TYPE: nucleotide                      | •    |
| (C) STRANDEDNESS: single strand           |      |
| (D) TOPOLOGY: linear                      | •    |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18: |      |
| AATTCTTTAT TCATAGATTC TACTAC              | . 26 |
|   | 26   |

| (2) INFORMATION FOR SEQ ID NO: 19:        |           |
|---|-----------|
| (i) SEQUENCE CHARACTERISTICS:             |           |
| (A) LENGTH: 15 base pairs                 |           |
| (B) TYPE: nucleotide                      |           |
| (C) STRANDEDNESS: single strand           |           |
| (D) TOPOLOGY: linear                      |           |
| · · · · · · · · · · · · · · · · · · ·     |           |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19: |           |
| CCCAAAGTCA AGGAG                          | 15        |
| (2) INFORMATION FOR SEQ ID NO: 20:        |           |
| (i) SEQUENCE CHARACTERISTICS:             |           |
| (A) LENGTH: 24 base pairs                 |           |
| (B) TYPE: nucleotide                      |           |
| (C) STRANDEDNESS: single strand           |           |
| (D) TOPOLOGY: linear                      |           |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20: |           |
| TCAAAATTTT CGGGTTTATT ACAG                | 24        |
| (2) INFORMATION FOR SEQ ID NO: 21:        | 24        |
| (i) SEQUENCE CHARACTERISTICS:             | •         |
| (A) LENGTH: 20 base pairs                 |           |
| (B) TYPE: nucleotide                      |           |
| (C) STRANDEDNESS: single strand           |           |
| (D) TOPOLOGY: linear                      |           |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21: |           |
| AGCTTTGCTG GTCCTTTCCA                     | 20        |
| ·   | 20        |
| (2) INFORMATION FOR SEQ ID NO: 22:        |           |
| (i) SEQUENCE CHARACTERISTICS:             |           |
| (A) LENGTH: 19 base pairs                 |           |
| (B) TYPE: nucleotide                      |           |
| (C) STRANDEDNESS: single strand           |           |
| (D) TOPOLOGY: linear                      |           |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22: |           |
| GGACAGCAGA AATCCACTT                      | 19        |
|   | <b>エフ</b> |

| (2) INFORMATION FOR SEQ ID NO: 23:        |      |
|---|------|
| (i) SEQUENCE CHARACTERISTICS:             |      |
| (A) LENGTH: 26 base pairs                 |      |
| (B) TYPE: nucleotide                      | • •  |
| (C) STRANDEDNESS: single strand           |      |
| (D) TOPOLOGY: linear                      |      |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23: | ,    |
| GCAACTAGAT TGTACACATT TAGAAG              | 26   |
| (2) INFORMATION FOR SEQ ID NO: 24:        | • -  |
|   |      |
| (i) SEQUENCE CHARACTERISTICS:             |      |
| (A) LENGTH: 25 base pairs                 |      |
| (B) TYPE: nucleotide                      |      |
| (C) STRANDEDNESS: single strand           |      |
| (D) TOPOLOGY: linear                      |      |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24: |      |
| CTTCTATATA TCCACTGGCT ACATG               | . 25 |
| (2) INFORMATION FOR SEQ ID NO: 25:        |      |
| (i) SEQUENCE CHARACTERISTICS:             |      |
| (A) LENGTH: 23 base pairs                 |      |
| (B) TYPE: nucleotide                      |      |
| (C) STRANDEDNESS: single strand           |      |
| (D) TOPOLOGY: linear                      |      |
|   |      |
| (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25: |      |
| GAAAAGTTAT CCTGGTAGCA GTT                 | 23   |
|   | 23   |



## SEQUENCE LISTING

| <110>        | Roche | e Diagno | osti  | cs GmbH    |            |            |            |          |
|--------------|-------|----------|-------|------------|------------|------------|------------|----------|
| <120>        | New I | primers  | and   | probes for | the detect | ion of HIV |            |          |
| <130>        | 1865  | 7pwomd   |       |            |            |            |            |          |
| <140>        | PCT/I | EP99/082 | 211   |            |            |            |            |          |
| <141>        | 1999- | -10-29   |       |            |            |            |            |          |
| <150>        | DE 19 | 9850186. | 2     |            |            |            |            |          |
| <151>        | 1998- | -10-30   |       |            |            |            |            |          |
| <160>        | 25    |          |       |            |            |            |            |          |
| <170>        | Pater | ntIn Ver | 2. 2. | . 1        |            |            |            |          |
| <210>        | 1     |          |       |            |            |            |            |          |
| <211>        | 62    |          |       |            |            |            |            |          |
| <212>        | DNA   |          |       |            |            |            |            |          |
| <213>        | HIV   |          |       |            |            |            |            |          |
| <400>        | 1     |          |       |            |            |            |            |          |
| agggaa<br>cc | ccca  | ctgctta  | agc   | ctcaataaag | cttgccttga | gtgcttcaag | tagtgtgtgc | 60<br>62 |
| <210>        | 2     |          |       |            |            | ,          |            |          |
| <211>        |       |          |       |            |            |            |            |          |
| <212>        |       |          |       |            |            |            |            |          |
| <213>        |       |          |       |            |            |            |            |          |
| <400>        | 2     | ٠        |       |            |            |            |            |          |
|              |       | ggaggct  | aga   | aggagagaga | tagatacaaa | agcgtcagta | ttaagcgggg | 60       |
| ga           | ,     |          | ,     |            |            | J . J J    |            | 62       |
| <210>        | 3     |          |       |            |            |            |            |          |
| <211>        |       |          |       |            |            |            |            |          |
| <212>        |       |          |       |            |            |            |            |          |
| <213>        |       |          |       |            |            |            |            |          |
| <400>        | 3 .   |          |       |            |            | •          |            |          |
| atttta<br>at | aaag  | cattggg  | acc   | agcggctaca | ctagaagaaa | tgatgacagc | atgtcaggga | 60<br>62 |

```
<210> 4
<211> 54
<212> DNA
<213> HIV
<400> 4
ctaaaggaag ctctattaga tacaggagca gatgatacag tattagaaga aatg
                                                                   54
<210> 5
<211> 59
<212> DNA
<213> HIV
<400> 5
tggaaaccaa aaatgatagg gggaattgga ggttttatca aagtaagaca gtatgatca 59
<210> 6
<211> 65
<212> DNA
<213> HIV
<400> 6
actgtaccag taaaattaaa gccaggaatg gatggcccaa aagttaaaca atggccattg 60
acaga
                                                                   65
<210> 7
<211> 53
<212> DNA
<213> HIV
<400> 7
caatacatgg atgatttgta tgtaggatct gacttagaaa tagggcagca tag
                                                             53
<210> 8
<211> 77
<212> DNA
<213> HIV
<400> 8
aaggaaaagg totatotggc atgggtacca gcacacaaag gaattggagg aaatgaacaa 60
gtagataaat tagtcag
                                                                  77
```

<210> 9

| <211> 67<br><212> DNA<br><213> HIV              |                          |            |                          |            |            |           |
|---|--------------------------|------------|--------------------------|------------|------------|-----------|
| <400> 9<br>aaatagtagc<br>actgtag                | cagctgtgat               | aaatgtcagc | : taaaaggaga             | agccatgcat | ggacaagtag | 60<br>67  |
| <pre></pre>                                     |                          |            |                          |            |            |           |
| <400> 10 caggaatttg                             | gaattcccta               | caatccccaa | agtcaaggag               | tagtagaatc | tatgaataa  | 59        |
| <210> 11<br><211> 101<br><212> DNA<br><213> HIV |                          |            |                          |            |            |           |
|   |                          |            | gacagcagaa<br>gtagtaatac |            | gaaaggacca | 60<br>101 |
| <210> 12<br><211> 62<br><212> DNA<br><213> HIV  |                          | ·          |                          |            |            |           |
| <400> 12<br>agggattatg<br>ta                    | gaaaacagat               | ggcaggtgat | gattgtgtgg               | caagtagaca | ggatgaggat | 60<br>62  |
| <210> 13<br><211> 97<br><212> DNA<br><213> HIV  |                          |            |                          |            |            |           |
|   | attgtacaca<br>tagaagcaga |            | aaagttatcc<br>gcagaaa    | tggtagcagt | tcatgtagcc | 60<br>97  |

| <210>          | 14  |    |
|----------------|---|----|
| <211>          | 20  |    |
| <212>          | DNA   |    |
| <213>          | Künstliche Sequenz                              |    |
|                |   |    |
| <220>          |   |    |
| <223>          | Beschreibung der künstlichen Sequenz: Primer GH |    |
|                | A2F   |    |
| - 400s         | 14  |    |
| <400>          |   |    |
| taccto         | ggcat gggtaccagc                                | 20 |
|                |   |    |
| <210>          | 15  |    |
| <211>          |   |    |
| <212>          |   |    |
|                | Künstliche Sequenz                              |    |
|                | •   |    |
| <220>          |   |    |
| <223>          | Beschreibung der künstlichen Sequenz: Primer GH |    |
|                | A2R   |    |
|                |   |    |
| <400>          | 15  |    |
| gactaa         | attta tctacttgtt catttc                         | 26 |
|                |   |    |
| <210>          | 16  |    |
| <211>          |   |    |
| <212>          |   |    |
|                | Künstliche Sequenz                              |    |
|                |   |    |
| <220>          |   |    |
| <223>          | Beschreibung der künstlichen Sequenz: Primer GH |    |
|                | A2P   |    |
|                |   |    |
| <400>          |   |    |
| cacaca         | aagg aattggag                                   | 18 |
|                |   |    |
| <210×          | 17  |    |
| <210><br><211> |   |    |
| <211>          |   |    |
|                | Künstliche Sequenz                              |    |
| .210/          |   |    |
| <220>          |   |    |
|                | Beschreibung der künstlichen Sequenz: Primer GH |    |
|                | A3F   |    |

<400> 17 tttggaattc cctacaatcc 20 <210> 18 <211> 26 <212> DNA <213> Künstliche Sequenz <220> <223> Beschreibung der künstlichen Sequenz: Primer GH A3R <400> 18 aattctttat tcatagattc tactac 26 <210> 19 <211> 15 <212> DNA <213> Künstliche Sequenz <223> Beschreibung der künstlichen Sequenz: Primer GH A3P <400> 19 cccaaagtca aggag 15 <210> 20 <211> 24 <212> DNA <213> Künstliche Sequenz <220> <223> Beschreibung der künstlichen Sequenz: Primer GH A4F <400> 20 tcaaaatttt cgggtttatt acag 24

<211> 20

<210> 21

<212> DNA

<213> Künstliche Sequenz

20

19

26

25

<220> <223> Beschreibung der künstlichen Sequenz: Primer GH A4R <400> 21 agctttgctg gtcctttcca <210> 22 <211> 19 <212> DNA <213> Künstliche Sequenz <220> <223> Beschreibung der künstlichen Sequenz: Primer GH A4P <400> 22 ggacagcaga aatccactt <210> 23 <211> 26 <212> DNA <213> Künstliche Sequenz <220> <223> Beschreibung der künstlichen Sequenz: Primer GH A6F <400> 23 gcaactagat tgtacacatt tagaag <210> 24 <211> 25 <212> DNA <213> Künstliche Sequenz <220> <223> Beschreibung der künstlichen Sequenz: Primer GH A6R

<210> 25

cttctatata tccactggct acatg

<400> 24





<211> 23

<212> DNA

<213> Künstliche Sequenz

<220>

<223> Beschreibung der künstlichen Sequenz: Primer GH A6P

<400> 25

gaaaagttat cctggtagca gtt

23